DOCUMENT RESUME

ED 209 932 FL 012 647

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TITLE The Acquisition of Copula and Auxiliary "Be" Forms.
INSTITUTION Stanford Univ., Calif. Dept. of Linguistics.
PUB DATE Nov 81
NOTE 8p.; In its Papers and Reports on Child Language Development, Number 20, p78-83, Nov 1981.

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Child Language; Discourse Analysis; *Language Acquisition; Language Research; *Linguistic Theory; Longitudinal Studies; *Oral Language; Preschool Children; Sentence Structure; Speech Communication; *Syntax; Verbal Learning; *Verbs

ABSTRACT

The acquisition of the copula and auxiliary "be" forms of "am," "is," and "are" was studied with 16 children. Spontaneous social speech samples were obtained from each child. One child's speech was sampled for approximately one hour per week from age 2:5 through 4:0, and for one-half hour per week from age 4:1 to 5:0. A second child's speech was sampled for approximately one hour per week from age 1:11 to 3:6. A weekly one hour sample of speech was obtained from the other children for six consecutive weeks. The speech samples were analyzed for omissions, incorrect uses, and correct uses of "be" allomorphs in specific sentential frameworks (e.g., copula "are" following "they" and preceding a prepositional phrase in the declarative). Results include the following: (1) In the acquisition of a "be" allomorph, the predominant pattern was one in which children learn to use the allomorph in quite specific contexts. This was true both for the child's initial uses of the form and the subsequent stable acquisition of the form. (2) Children do not seem to learn all members of the copula or the auxiliary "be" class simultaneously; in addition to varying patterns of initial uses, differences were found in regard to age of final acquisition (i.e., 90 percent correct usage in obligatory contexts). (3) Copula "be" forms tended to be earlier stable acquisitions than auxiliary "be" forms. (4) Most "be" forms were acquired (90 percent criterion) in declarative contexts before yes-no question contexts and "be" forms also tended to be acquired (90 percent criterion) in yes-no question contexts before "wh" contexts. (SW)

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from

PAPERS AND REPORTS ON CHILD LANGUAGE DEVELOPMENT

Number Twenty

November 1981

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THE ACQUISITION OF COPULA AND AUXILIARY BE FORMS

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Studies of syntactic development necessarily focus on the nature of the syntactic categories being acquired, as well as the processes underlying the acquisition of such categories. These concerns are intimately related to concerns about the nature of grammatical rules and their acquisition, in that rules operate on form classes. Thus, the interrelation of hypotheses about syntactic categories and syntactic rules is one of mutual constraint. Hypotheses about syntactic categories constrain hypotheses about syntactic rules, and vice versa.

The present study was concerned with the notion that syntactic development is best characterized as a gradual process, one in which children's initial syntactic categories and rules are highly specific, the developmental process being such that these initial specific acquisitions gradually evolve into general fully productive ones (Brown, 1973; R. Clark, 1974, 1977; Kuczaj, 1977, 1978, in press; Kuczaj & Brannick, 1979; Maratsos, 1979; Maratsos & Chalkley, 1980).

This hypothesis was examined in the present study by investigating the acquisition of certain copula and auxiliary be forms. More specifically, the acquisition of uncontracted present tense be allomorphs (am, is, and are) was studied. Contracted forms ('m, 's, and 're) were excluded from consideration because of the difficulties involved in determining the status of such forms in young children's speech (Brown, Cazden, & Bellugi, 1969; Brown, 1973; Kuczaj, 1976, 1979; Maratsos & Kuczaj, 1978). Past tense be forms were excluded because, unlike present tense be allomorphs, they add meaning to a sentence, and I wished to avoid comparing the acquisition of meaningful forms with the acquisition of meaningless forms (see Brown, 1973, for a discussion of the semantics of be).

Subjects. Sixteen children participated in the present investigation. Two of the children (my two sons, Abe and Ben) formed a longitudinal sample. The remaining fourteen children formed a cross-sectional sample, with two different children being studied at each six month interval from 2;6 (years;months) to 5;6.

Data Collection. The data consisted of spontaneous social speech samples obtained from each child. Abe's speech was sampled for approximately one hour per week from 2;5 through 4;0, and for ½ hour per week from 4;1 to 5;0. Ben's speech was sampled for approximately one hour per week from 1;11 to 3;6. A weekly one hour sample of speech was obtained from each of the children in the cross-sectional sample for six consecutive weeks.

Data Analysis. The speech samples were analyzed for omissions, incorrect uses, and correct uses of be allomorphs in specific sentential frameworks (e.g., copula are following they and preceding a prepositional phrase in the declarative). These detailed analyses of the use of

be allomorphs provided insights into both the acquisition of particular allomorphs and the acquisition of be qua class.

Results. In this section, I will most frequently refer to the results from Abe and Ben's speech. The references will be to either the onset of use of a be form in particular contexts or the stable acquisition of the form in those contexts (defined as at least 90% success rate in obligatory contexts, following Brown, 1973). Since the data from the children in the cross-sectional sample provided information about each child's knowledge of the be allomorphs during a given period, but no actual information about the course of any individual's acquisition of be, this data will be compared and contrasted with the data on the developmental patterns in Abe's and Ben's acquisition of be.

The results were as follows:

1. In the acquisition of a be allomorph, the predominant pattern was one in which children learn to use the allomorph in quite specific contexts. This was true both for the child's initial uses of the form and the subsequent stable acquisition of the form.

Examples of this development pattern in regard to initial uses of a be allomorph include the following:

a. At 2;5, Abe sometimes used copula are in declarative sentences beginning with those or these (e.g., "those are good toys"), but consistently omitted copula are in all other obligatory contexts. At 2;6, he began to use copula are in declaratives beginning with you and simple noun phrases. However, he consistently omitted auxiliary are in declarative contexts until 2;8, at which time he began to use this allomorph in limited declarative contexts.

b. Similarly, Ben's use of copula is began as a form which always occurred in sentence final position (e.g., "there spoon is", "here (it) is", "there they is"; age 2;0). Although he produced several constructions with be in a sentence internal position at 2;2 (e.g., "toast be in there"), he failed to produce is (or am or are, for that matter) in sentence internal position until 2;3. At this time, this was sometimes followed by is (e.g., "this is hot"). At 2;4, Ben began to produce copula is in sentence internal position with a variety of forms preceding it (e.g., "Ben is happy", "T.V. is on"). However, he also continued to use is in sentence final position, but such use was now more likely to be a grammatical construction (i.e., grammatical in terms of adult standards) such as "there it is." Curiously, constructions such as "is key" and "is here" (with declarative intonation) also began to appear during this time.

Even though these early acquisitions were specific and thereby relatively limited, they were nonetheless partially productive. For example. Ben produced novel forms such as "coat off. Hot is." (which context suggested meant "I want my coat off. It's hot") at 2;1 and "Abe on chair is" at 2;3.

2. Children do not seem to learn all members of the copula or the auxiliary be class simultaneously. In addition to the varying patterns of initial uses, one also finds differences in regard to age

of final acquisition (defined as 90% correct usage in obligatory contexts, following Brown, 1973). The data which support this claim are the following:

a. For copula be in declarative contexts, Abe acquired am at 2;5, is at 2;7, and are at 2;9. For auxiliary be in declarative contexts, am was acquired at 2;5, is at 3;0 and are at 3;0.

b. Ben consistently acquired is before are, and are before am. This was true for both copula and auxiliary forms, and for declaratives, yes-no questions, and wh-questions. Moreover, Ben exhibited a consistent lack of integration of allomorphs. For example, when Ben began to use copula are, he used it in sentence final position, as was the case for is (his first use of are was "there they are" at 2;1). However, he did not begin to use are in sentence internal position until 2;6, ten weeks after he had begun to do so for copula is.

c. In wh question contexts, Abe achieved the 90% criterion of use (though not necessarily in the correct post wh position) for copula is at 2;9, auxiliary is at 2;11, and copula and auxiliary are at 3;3. The 90% criterion of correct placement in wh questions was achieved at 2;11 for copula is, 3;1 for auxiliary is and 3;3 for copula and auxiliary are.

d. In the cross-sectional sample, one child (D.N.) achieved acquisitional criterion on correct placement of auxiliary are in wh questions but failed to do so for auxiliary is. Three children (A.B., V.Q., K.M.) exhibited the opposite pattern, achieving the 90% criterion for correct placement of auxiliary is but not auxiliary are in wh questions.

3. Copula be forms tended to be earlier stable acquisitions than auxiliary be forms. This was true for the following forms in:

a. declaratives: am (Ben, M.Z.)
are (Abe, Ben, N.E., M.Z.)
is (Abe, Ben, M.Z., D.N.)

Ben's acquisition of copula be allomorphs involved different errors than did his acquisition of auxiliary be allomorphs. Specifically, there were no sentence initial or final errors for auxiliaries. Thus, errors such as "is going" or "we going are" did not occur, although errors such as "I is drawing" (2;6) did occur.

b. yes-no questions: are (Ben, M.Z.)
is (Ben, I.B., M.Z.)

Exceptions: Two of the children in the cross-sectional sample (N.E., I.B.) were more competent at correct placement of auxiliary are than copula are in yes-no questions.

c. wh questions: are (Ben, N.E., H.K., V.Q., K.M.)
is (Abe, N.E., M.Z., H.K.)

Exceptions: One of the children in the cross-sectional sample (A.B.) was more competent at correct placement of auxiliary is than copula is in wh questions.

4. Most be forms were acquired (90% criterion) in declarative contexts before yes-no question contexts. This was observed in the following cases:

a. copula is (Abe, Ben, M.Z.)
b. copula are (Ben, M.Z.)
c. auxiliary is (Abe, Ben, M.Z., D.N.)
d. auxiliary are (Ben, M.Z.)

5. Be forms also tended to be acquired (90% criterion) in yes-no question contexts before wh contexts. This was observed in the following cases:

a. copula is (Ben, M.Z.)
b. copula are (Abe, Ben, M.Z.)
c. auxiliary is (Ben, N.E., M.Z., D.N., H.K.)
d. auxiliary are (Abe, Ben, N.E., M.Z., H.K., V.Q., K.M., A.B.)

Exceptions: Abe exhibited earlier acquisition of copula is in wh question contexts (2;9) than in yes-no question contexts (3;0). He also exhibited earlier acquisition of auxiliary is in wh questions (2;11) than in yes-no questions or declaratives (3;0).

6. In regard to the 90% criterion of correct use in obligatory contexts, there were no simultaneous acquisitions in Ben's speech. However, there were some simultaneous acquisitions of be forms in Abe's speech. These were:

2;5 (onset of speech sampling) - copula and auxiliary am in declaratives
3;0 - copula and auxiliary are in declaratives
copula is and auxiliary are in yes-no questions (although not necessarily in initial position)
copula are and auxiliary is in correct initial yes-no question position.
3;1 - copula is and auxiliary are in correct yes-no question position
3;3 - copula and auxiliary are used in correct wh question position.

Discussion. Given the semantic emptiness of present tense be forms, and the phonological and grammatical dispersion of be allomorphs, it is not surprising that children do not appear to relate the allomorphs early in development (although some integration does occur for at least some children, e.g., witness Abe's case; cf Bellugi, 1975; Klima & Bellugi, 1966; Miller & Ervin-Tripp, 1964). As noted earlier, even these initial acquisitions may be somewhat productive. Children, then, are not simply copying heard relations. Even early on, they appear to be attempting to generalize, but are limited to doing so on the basis of relatively specific lexical relations.

By paying attention to the correspondences among particular syntactic relations, children gradually broaden the bases of their

generalizations. Children gradually construct a general system by attending to co-occurrence relations (Maratsos, 1979; Maratsos & Chalkley, 1980), and generalizing accordingly. Of course, children sometimes err during this process, and so they must continue to monitor their input in order to either confirm or reject their generalization hypotheses.

The notion that syntactic categories and rules begin as highly specific fits well with the individual differences which were observed. If children pay attention to relations among individual lexical items, and gradually attempt to derive more general relations from these, individual differences would be expected to correspond to differences in input, differences in what children focus on, and differences in how quickly and on what basis children attempt to generalize (which also affects the frequency and types of mistakes). For example, Abe exhibited certain simultaneous acquisitions which suggested that he had related certain be allomorphs, whereas Ben did not. This difference reflects the different styles exhibited by Abe and Ben as language learners. Abe seemed to be much more interested in organizing and consolidating the information he had acquired than was Ben, who gave the appearance of attempting to use what he knew as soon as he learned it. Thus, his generalizations usually rested on highly specific and/or inappropriate information. In the future, more attention must be paid to individual differences in language development. The presence and absence of particular differences among individuals is likely to prove as important for theories of language development as will the presence and absence of differences among the acquisition of different languages. Thus, the study of individual similarities and differences and the study of cross-sectional similarities and differences are aspects of the same set of problems. What are the universal characteristics of language development? What are the aspects of language development most susceptible to individual and cultural variation?

Complexity will undoubtedly be one of the factors which influences whether individual and/or cultural differences occur for given acquisitions. For instance, the typical pattern of declarative use before yes-no question use, and yes-no question use before wh question use observed in the present study undoubtedly reflects the relative semantic, syntactic and pragmatic complexity of these forms. Teasing apart such complexity factors will greatly assist attempts to explain language acquisition. Again, however, since this pattern was typical rather than absolute (there were exceptions), attention must be given to the nature and causes of individual differences in language acquisition.

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